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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,279	04/06/2001	Kevin J. Negus	034421-099	6342

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EXAMINER

HO, DUC CHI

ART UNIT PAPER NUMBER

2665

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

5m

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/828,279	NEGUS, KEVIN J.	
	Examiner	Art Unit	
	Duc C. Ho	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Objections***

1. Claim 8 is objected to because of the following informalities: Claim 8 appears to be in error by missing the term "appended", since according to the paragraph 0016, the

TCP Ack message is appended and sent only if link quality is excellent.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tourrilhes (PiggyData: reducing CSMA/CA collisions for multimedia and TCP connections-IDS record) , in view of Bennett et al. (US 6,345,302), hereinafter referred to as Bennett.

Regarding claims 1, and 9, Tourrilhes discloses a development of radio LANs in which MAC acknowledgment and TCP acknowledgment are required for wireless MAC layer and wireless TCP layer, respectively after the receiving node receives transmitted packets, see 2.3 layers interaction on page 1675 and page 1677.

In Tourrilhes, since the MAC acknowledgment and the TCP acknowledgment are going in the same direction as the reverse flow of data (see fig. 2.3-page 1675) both could be combined (appended).

Tourrilhes, however, does not teach TCP acknowledgment is buffered by the wireless MAC layer.

Bennett teaches system for transmitting and receiving data within a reliable communications protocol by concurrently processing portions of the protocol suite. Referring to figure 4, the memory 40 stores command list 42, which acts as a buffer for TCP ACK, see col. 6, lines 12-28.

One skill in the art would recognize the advantage of buffering the TCP ACK at the MAC layer so that both ACKs can be sent at the same time, thereby reducing collisions and overhead on CSMA/CA for the TCP ACK level.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Tourrilhes with Bennett.

The suggestion/motivation for doing so would have been decreasing the proportion of TCP ACK in the traffic, reducing collisions and overhead on CSMA/CA for the TCP ACK level.

Therefore, it would have been obvious to combine Bennett with Tourrilhes to obtain the invention as specified in claim 1.

Regarding claims 2, and 10, in Tourrilhes the wireless MAC layer is a modified CSMA/CA layer.

Regarding claim 3, the combine of a TCP layer acknowledgment to a MAC layer acknowledgment is done under conditions of bidirectional or asymmetrical traffic.

Regarding claim 4, in Tourrilhes by combining the TCP ACK and MAC ACK in the same direction, the combined MAC layer acknowledgment and TCP layer acknowledgment does not need to contend for the wireless medium.

Regarding claim 5, in Tourrilhes a TCP ACK generated from a receiving node is sent in response to messages transmitted from a sending node.

Regarding claims 6, and 11, the TCP ACK combined to a MAC ACK generated at a receiving node in response to messages transmitted from a sending node will be sent to the sending node.

Regarding claim 7, Tourrilhes discloses a MAC acknowledgment is sent to provide MAC layer acknowledgment of receipt of TCP acknowledgment appended message, see pages 1675-1676.

Regarding claim 8, Tourrilhes teaches a mechanism to decrease the proportion of TCP ACK in the traffic in order to improve the throughput, therefore, Tourrilhes inherently teaches the claimed limitation "TCP ack is sent only when link quality is very good".

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Ho whose telephone number is (571) 272-3147. The examiner can normally be reached on Monday through Friday from 7:00 am to 3:30 pm.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner



Duc Ho

06-09-05